UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

May 6, 1999

REPLY TO THE ATTENTION OF SR-6J

Mr. Clifton A. Lake, Esquire
McBride, Baker & Coles
500 West Madison Street
40th Floor
Chicago, Illinois 60661-2511

VIA FACSIMILE AND REGULAR MAIL

Dear Mr. Lake:

This letter follows up on my previous letter of February 23, 1999, regarding the Quality Assurance Project Plan (QAPP) for the Engineering Evaluation/Cost Analysis (EE/CA) for the Fansteel property located at Number One Tantalum Place, North Chicago, Lake County, Illinois.

The *first revision* of the QAPP for the Fansteel property has been reviewed and found to be unacceptable. I have enclosed comments and recommendations that describe the deficiencies and provide guidance for their resolution.

If you have any questions, please contact me at (312) 886-1477.

Sincerely,

John J. O'Grady
Remedial Project Manager
Superfund Division

cc: R. Nagam, E&E
T. Krueger, U.S. EPA Region 5 Office of Regional Counsel

Fansteel, Inc.
Number One Tantalum Place
North Chicago, Illinois

SITE INVESTIGATION WORK PLAN (SIWP)

A. Sections 3.5.2 and 3.6.1
The parameters synthetic precipitation leaching procedure (SPLP) Pb and pH for analyzing soil samples and creek/ditch sediment samples has been added. These parameters were not included in the April 1998 SIWP. Provide an SOPs based on SW-846 Method 1312 and 9045 for these parameters.

B. Section 3.6.4
The parameter pesticides for analyzing creek sediment samples has been added. This parameter was not included in the April 1998 SIWP. Provide an SOP based on SW-846 Method 8081 for this parameter.

C. Section 4.3.1
The parameter total organic carbon (TOC) for analyzing soil samples has been added. This parameter was not included in the April 1998 SIWP. Provide an SOP based on SW-846 Method 9060A for this parameter.

D. Section 4.3.1, pg 4-5, 2nd paragraph
The sample identification scheme is not consistent with QAPP Section 5.1.

E. Section 4.3.2
SI/WP Comment D.3) of July 13, 1998, was not addressed. Provide SOPs for the field measurements of **pH**, **temperature**, and **conductivity**.

QUALITY ASSURANCE PROJECT PLAN (QAPP)

I. SIGNATURE PAGE

Provide Signature page with signature lines for all appropriate officials. See Signature page of the Region 5 Model QAPP.

II. PROJECT DESCRIPTION

Section 1.6.1 and TABLE ONE in Appendix B

1) For Matrix **Soil** amend EPA SW-846 Method "7060", to **7000**. The method 7060 is for the GFAA analysis of arsenic.
2) For all Matrix(ices) the EPA SW-846 Method "1311", perhaps, should be **1312**. The EPA SW-846 Method 1311 is the toxicity characteristic leaching procedure (TCLP). Please confirm the project required method.
3) For Matrix **Ground Water** and **Field Blanks** amend EPA SW-846 Method "3050", to **3010/3020**. The method 3050 is the digestion method for soils.
4) For Matrix **Creek Sediment**, **Ditch Sediment**, and **Field Blanks** for Parameter **PCBs** amend EPA SW-846 Method "8081", to, **8082**. The SOP provided by **Great Lakes Analytical (GLA)** is based on the method 8082.
5) Revisions to TABLE ONE should be made to TABLE ONE of the SIWP.

III. *PROJECT ORGANIZATION AND RESPONSIBILITY*

QAPP Comment III.A. of July 13, 1998, was not properly addressed.

A. Section 2.2
Include the following description:
The U.S. EPA Remedial Project Manager (RPM) has the overall responsibility for all phases of the Site Investigation.

B. Section 2.3
Include the following description:
The U.S. EPA Quality Assurance Reviewer (QAR) has the responsibility to review and approve all QAPPs.
Include a box for the EPA QAR next to the box for the EPA RPM in FIGURE 2.1.

IV. QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT

A. Section 3.0
Include QC criteria for precision and accuracy for the field instruments measuring pH, temperature, and conductivity.

B. Section 3.1.3
The references to Section 8.3 and Section 9.6 of the **GLA** Quality Assurance Program (QAP) should be Section 8.6.

V. CUSTODY PROCEDURES

Section 5.1, pg 3/4
The sample identification scheme is not consistent with SIWP Section 4.3.1.

VI. ANALYTICAL PROCEDURES

A. Section 7.1
The SOPs for field measurement of pH, temperature, and conductivity were not included in Appendix C. Please provide.

B. Section 7.2.1

1) TABLE TWO and TABLE SIX in SIWP Attachment B
The ANALYTE Dibromoethane, may be, Dibromomethane.

2) TABLE TWO and TABLE SIX in SIWP Attachment B
Verify if the ANALYTE **Methyl iodine** is a project required analyte. This analyte is not listed in Appendix A of the GLA 8260 BG SOP.

3) TABLE THREE in SIWP Attachment B
Is the ANALYTE **PCB 1016/1260** the only aroclors of concern, or should all the aroclors be listed?

4) TABLE SEVEN in SIWP Attachment B
The ANALYTE **PCB 1016/1260** is included for Ground Water. However, Section 3.5 and TABLE ONE of the SIWP do not specify PCBs as compounds of concern in soil and ground water. Please confirm.

5) TABLE SEVEN in SIWP Attachment B
The REPORTING LIMIT for Tantalum has been determined to be 5 mg/kg. Will the REPORTING LIMIT for Ground Water be 0.050 mg/L?

VII. DATA REDUCTION, VALIDATION AND REPORTING

Section 9.2

Carlson Environmental, Inc. (CEI) QA Manager should validate 20% of the data. Data validation SOPs should be prepared.

VIII. PERFORMANCE AND SYSTEM AUDITS

Section 10.2.1 Internal Laboratory Audits

CEI should also be able to conduct laboratory audits.

APPENDIX C CEI SOPs

A. Provide SOPs for the field measurements of **pH**, **temperature**, and **conductivity**.

B. **SOP # FW-S-001**

1) Section 3.0
Provide the CEI SOP # FW-C-011, since the EPA Method 5035 will be used in this project.

2) Editorial, page 4
There are 2 sections 7.2.3.

C. **SOP # FW-C-004**

Will the Encore™ Sampling system be used for sediment sample collection? Please describe sediment sample collection with the Encore™ Sampler.

D. **SOP # FEW-C-006**

Section 5.0
Include the instruments needed to measure pH, temperature, and conductivity.

E. **SOP # FW-C-010**

This SOP could be deleted. Sampling drums is not part of the SIWP.

F. **SOP # FW-R-003**

QAPP Comment VI.A. of July 13, 1998, was not completely addressed. Provide copies of sample tags and custody seals.

GREAT LAKES ANALYTICAL SOPs

GENERAL COMMENT

SOPs need to be provided for the analysis of **Pesticides** (SW-846 Method 8081), **SPLP Pb** (SW-846 Method 1312), **TOC** (SW-846 Method 9060), and **pH** (SW-846 Method 9045). These parameters have been added to the SIWP of October 1998, but were not in the SIWP of April 1998.

I. **Control Limits**

A. On the first page CONTROL LIMITS are given for TCLP VOCs. However, the TCLP VOCs are not of concern in this project. The SPLP Pb is the analyte of concern.

B. Provide MDLs, PQLs, and RLs for **VOCs** in soil/sediment and ground water. Provide MDLs, PQLs, and RLs for **Pesticides** and **PNAs** in sediment. Provide MDLs, PQLs, and RLs for **Aroclors** in sediment, unless PCB 1016/1260 are the only parameters of concern. The MDLs, PQLs, and RLs should be included in the SOPs.

II. **THE DETERMINATION OF MERCURY IN LIQUIDS AND SOLIDS GLA 245.1/5 BG**

A. Section 11.6
It is recommended **GLA** incorporate the Method of Standard Additions (MSA) into this SOP.

B. Section 11.6.3
It is recommended to end the analytical run with a calibration blank and a check standard.

C. Section 11.7
Express the MD/MSD calculations for per-cent recovery (%Rec) and relative per-cent difference (RPD).

III. **THE DETERMINATION OF TOTAL CYANIDE AND CYANIDE AMENABLE TO CHLORINATION IN LIQUIDS AND SOLIDS GLA 335.4 BG**

A. Section 6.0
It is recommended **GLA** incorporate the MSA into this SOP.

B. Section 11.7.10
It is recommended to end the analytical run with a calibration blank and a check standard.

C. Section 11.8
Express the MD/MSD calculations for %Rec and RPD.

IV. THE DIGESTION OF LIQUIDS FOR THE ANALYSIS OF METALS GLA 3015 BG

A. Section 11.0
Add **Ta** to the selected digestion procedure.

B. APPENDIX B
Please specify the components of the standards GLA-SPK-1A, 3B, 4B, 5, 6, and EARTH that will be used as an addendum to this SOP or the analytical SOPs.

V. THE DIGESTION OF SOLIDS FOR THE ANALYSIS OF METALS GLA 3050 BG

A. Section 11.0
Add **Ta** to the selected digestion procedure.

B. Section 11.3
Include the preparation of the laboratory control sample (LCS).
The % dry weight should be determined.

C. Section 11.4 editorial
The analyte **Ag** is missing from the list.

D. APPENDIX D
Please specify the components of the standards GLA-SPK-1A, 3B, 4B, 5, 6, and EARTH that will be used as an addendum to this SOP or the analytical SOPs.

VI. ANALYSIS OF METALS USING GFAA GLA 7000 BG

A. Section 10.6
Indicate the concentration of the calibration standards.

B. Section 11.0
Denote the recommended instrument parameters.

C. Section 11.3
It is recommended **GLA** incorporate the MSA into this SOP.

D. Section 11.4
Express the calculations for sample concentration and the MD/MSD calculations for %Rec and RPD.

VII. ANALYSIS OF METALS USING ICP GLA 6010 BG

A. Section 8.0
It is recommended **GLA** incorporate the MSA into this SOP.

B. Section 11.4.7
It is recommended to include the CCV/CCB at the end of the analysis.

C. Section 11.5
Express the MD/MSD calculations for %Rec and RPD.

VIII. ORGANIC EXTRACTION AND SAMPLE PREPARATION FOR SEMIVOLATILE DETERMINATIVE METHODS GLA 3500 BG

A. Section 11.3
The % dry weight should be determined.

B. Section 11.3.3
The SW-846 Method 3550B employs the extraction solvents acetone/methylene chloride or acetone/hexane for semivolatiles. Does **GLA** obtain adequate performance using only methylene chloride?

C. Section 11.3.9
The SW-846 Method 3550B specifies a final extract volume of 1.0 ml for the Method 8310 analysis. Does **GLA** obtain adequate performance with this deviation?

IX. POLYCHLORINATED BIPHENYLS BY GAS CHROMATOGRAPHY: CAPILLARY COLUMN METHOD GLA 8082 BG

A. Section 6.3
The SW-846 Method 8082 specifies the check standard at the end of the analysis.

B. Section 10.1.1
The SW-846 Method 8082 indicates the surrogate standard is prepared in acetone, not hexane.

C. Section 10.4
Specify the concentrations of the calibration standards.

D. Section 11.5
Before quantitating **aroclors** on the second, or confirmation column, the sensitivity of the second column must be demonstrated by analyzing a standard at about the same concentration as reported from the primary column.

E. Section 11.5
Express the MD/MSD calculations for %Rec and RPD.

F. Section 11.5.3
Include the % dry weight in the concentration calculation.

G. Section 11.5.4 typo?
The "reporting limit (MDL)" does not appear consistent. Analytes greater than the MDL, but less than the RL, should be reported as estimated. Analytes less than the MDL could be reported as non-detected. See MDLs, PQLs, RLs, Control Limits-Organic Table.

X. THE DETERMINATION OF VOLATILE ORGANIC COMPOUNDS BY PURGE-AND-TRAP AND GAS CHROMATOGRAPHY/MASS SPECTROMETRY GLA 8260 BG

A. Section 1.0 and Appendix A
Provide Retention Times (RTs), MDLs, PQLs, and RLs, both soil/sediment and water, for the compounds determined by this method.

B. Section 9.0
Describe the mass spectrometer parameters. Will the mass spectrometer operate in the SIM mode?

C. Section 11.4
Specify the concentrations of the 5 calibration standards. The low standard should be near the project required RL of 2.0 ug/L.

D. Section 11.12
TABLE SIX and TABLE TWO of the SIWP specifies the RLs of 2 ug/L, ground water, 5 ug/kg, soil/sediment, respectively. Can this method achieve these RLs?

E. Section 13.2
Analytes responding below the RL but above the MDL, perhaps, should be reported as estimated.

F. APPENDIX A.
TABLE TWO and TABLE SIX of the SIWP list the compound **Methyl iodine**. If this is a project required compound, include it on this list and the primary characteristic ion.

XI. POLYNUCLEAR AROMATIC HYDROCARBONS BY HPLC GLA 8310 BG

A. Section 1.0
Provide RTs, MDLs, PQLs, and RLs, both soil/sediment and water, for the compounds determined by this method.

B. Section 1.3 and TABLE 1
TABLE FOUR of the SIWP lists the compound **Fluorene**. Include this compound in TABLE 1. The compounds 1-Methyl naphthalene and 2-Methyl naphthalene are not required for this project.

C. Section 10.4
Denote the concentration of the 5 calibration standards.

D. Section 12.0
Discuss in more detail the initial calibration procedures.

E. Section 12.7.2
Describe the recommended gradient program.

F. Section 12.7.3.e
Express the calculations for sample concentration and the MD/MSD calculations for %Rec and RPD.